FCC 95-149

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C.

In the Matter of	)	
	)	
Interconnection and Resale Obligations	)	
Pertaining to	)	CC Docket No. 94-54
Commercial Mobile Radio Services	)	

SECOND NOTICE OF PROPOSED RULE MAKING

Adopted: April 5, 1995; Released: April 20, 1995

Comment Date: **June 14, 1995**

Reply Date: **July 14, 1995**

By the Commission: Commissioner Quello issuing a separate statement.

TABLE OF CONTENTS

I. INTRODUCTION

1. This proceeding continues our inquiry into matters relating to the interconnection of commercial mobile radio service (CMRS) systems, and initiates a rule making to address the resale obligations of CMRS providers. This docket was initiated last year to consider proposed rules regarding CMRS interconnection. A notice of proposed rule making was adopted to consider: (1) the imposition of equal access obligations upon CMRS providers; and (2) the need for rules governing the requirements for interconnection service provided by local exchange carriers (LECs) to CMRS providers. A third aspect of CMRS interconnection was the subject of a notice of inquiry into whether the Commission should propose rules requiring CMRS providers to interconnect directly with each other, and/or propose rules prohibiting CMRS providers from restricting resale.[1] In this order, we examine only those issues raised in the *Interconnection NOI.*

2. Based upon the record before us, we conclude that at present it would be premature for the Commission to propose or adopt rules of general applicability requiring direct interconnection arrangements between CMRS providers. Although cellular service has become a staple of modern telecommunications service, many of its potential competitors are just beginning to emerge. We have only recently concluded our auction for the A and B blocks for broadband personal communications service (PCS) licenses and have yet to begin the licensing process. The specialized mobile radio (SMR) industry is also undergoing a period of profound change and technological development. Especially in view of the nascency of many CMRS providers, and the rapidly developing technologies they may be employing, we cannot at this time make general conclusions about either the technical nature of CMRS-to-CMRS interconnection, the costs involved, or the nature of any rules that would best ensure its implementation. For present, we leave such decisions to the informed business judgment of the CMRS providers and to the competitive forces of the CMRS marketplace. Nonetheless, because of the fundamental importance of interconnectivity, and the needs of carriers and the investment community to understand how CMRS will be regulated, we believe that it is not too early to begin to articulate some broad policy guidelines to help chart the course of the CMRS industry through this all-important early phase of its development. Accordingly, we seek comment on several broad policy guidelines intended to pilot the implementation of the basic common carrier obligations of CMRS providers under Title II of the Communications Act of 1934, as amended.[2] In addition, we continue our inquiry into the interconnection arrangements required to support CMRS roaming service.

3. Further, we tentatively conclude that imposing a resale obligation on most CMRS providers would be in the public interest. We also tentatively conclude that a resale

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[1] Equal Access and Interconnection Obligations Pertaining to Commercial Mobile Radio Service, CC Docket No. 94-54, Notice of Proposed Rule Making and Notice of Inquiry, 9 FCC Rcd 5408 (1994) (*Equal Access NPRM; Interconnection NOI*).

[2] 47 U.S.C. §§ 201-208.

obligation will provide additional competition as well as act to jump start the entry of personal communications services into the CMRS marketplace while imposing only minimal costs upon the subject carriers. We also seek comment on whether there should be a time limitation on the obligation of CMRS providers to provide resale capacity to their facilities-based competitors similar to the five-year limit on the provision of resale capacity by cellular providers to their facilities-based competitors.

II. BACKGROUND

4. The Omnibus Budget Reconciliation Act of 1993[3], amended Section 332 of the Communications Act (the Act), *inter alia*, to require that the Commission respond to requests of CMRS providers to establish physical connections with common carriers pursuant to Section 201 of the Act.[4] The Budget Act also classifies CMRS providers as common carriers.[5] In the *CMRS Notice of Proposed Rule Making*, the Commission requested comment

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[3] Omnibus Budget Reconciliation Act of 1993, Pub.L.No. 103-66, 107 Stat. 312 (1993) (Budget Act).

[4] Specifically, the Budget Act amended the Communications Act of 1934 (Act) to provide:

> Upon reasonable request of any person providing commercial mobile service, the Commission shall order a common carrier to establish physical connections with such service pursuant to the provisions of section 201 of this Act. Except to the extent that the Commission is required to respond to such a request, this subparagraph shall not be construed as a limitation or expansion of the Commission's authority to order interconnection pursuant to this Act.

47 U.S.C. § 332(c)(1)(B). Section 201(a) of the Act reads in pertinent part as follows:

> It shall be the duty of every common carrier engaged in interstate or foreign communication . . . in accordance with the orders of the Commission, in cases where, after opportunity for hearing, finds such action necessary or desirable in the public interest, to establish physical connections with other carriers, to establish through routes and charges applicable thereto and the divisions of such charges, and to establish and provide facilities and regulations for operating such through routes.

47 U.S.C. § 201(a).

[5] 47 U.S.C. § 332(c)(1).

regarding whether local exchange carriers (LECs) and CMRS providers should be required to provide interconnection to mobile service providers.[6]

5. In the *CMRS Second Report and Order,*[7] the Commission imposed an obligation on LECs to provide the type of interconnection reasonably requested by all CMRS providers. The Commission also found that the record established in response to the *CMRS Notice of Proposed Rule Making* was inadequate to decide whether to adopt generic rules requiring CMRS providers to furnish interstate interconnection to other mobile service providers. The Commission expressed its intention to initiate an inquiry into that question.[8]

6. On July 1, 1994, the Commission released a Notice of Proposed Rule Making (*Equal Access NPRM*) proposing equal access obligations for certain CMRS providers, seeking comment on tariffing requirements for LEC to CMRS interconnection, and instituting a Notice of Inquiry (*Interconnection NOI*) into whether the Commission should find that it would be in the public interest to impose a general interconnection obligation on CMRS providers.[9] The *Interconnection NOI* further sought comment on whether the Commission should impose roaming[10] and resale obligations on some or all CMRS providers.[11]

7. Seventy-four parties filed comments and 45 parties filed reply comments. These parties include LECs and their affiliated cellular companies, non-wireline cellular companies, interexchange carriers (IXCs), industry trade associations, SMR licensees, mobile satellite service (MSS) providers, and parties who intended to bid on PCS licenses.[12]

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[6] Implementation of Sections 3(n) and 332 of the Communications Act, Regulatory Treatment of Mobile Services, GN Docket No. 93-252, Notice of Proposed Rule Making, 8 FCC Rcd 7988, 8001-002 (1993) (*CMRS Notice of Proposed Rule Making*).

[7] Implementation of Sections 3(n) and 332 of the Communications Act, Regulatory Treatment of Mobile Services, GN Docket No. 93-252, Second Report and Order, 9 FCC Rcd 1411 (1994) (*CMRS Second Report and Order*), *reconsideration pending.*

[8] *Id.* at 1499-1500.

[9] *Equal Access NPRM; Interconnection NOI,* 9 FCC Rcd 5408 (1994).

[10] Roaming occurs when the subscriber of one CMRS provider enters the service area of another CMRS provider with whom the subscriber has no pre-existing service or financial relationship, and attempts to either continue an in-progress call, receive an incoming call, or place an out-going call.

[11] *Interconnection NOI,* 9 FCC Rcd at 5459, 5466-69.

[12] A list of the parties filing comments and reply comments is contained in Appendix A. UTC, The Telecommunications Association, filed its reply comments one day late. UTC's motion to accept a late filed pleading is hereby granted.

III. PLEADINGS; DISCUSSION

A. Interconnection Obligation

1. Generally

a. Background

8. The *Interconnection NOI* identified as a principal objective the exploration of whether interstate interconnection requirements would foster the interconnectivity and growth of diverse and competitive mobile services.[13] The *Interconnection NOI* sought comment on whether it was necessary for the Commission to promulgate a general rule requiring CMRS providers to provide interstate interconnection to other CMRS providers, or whether the Commission could anticipate that the CMRS marketplace will develop in such a way that makes establishing general interconnection obligations applicable to CMRS providers unnecessary.[14]

9. Comment was also sought on two specific questions related to this general inquiry: (1) Whether there is a basis to conclude that there are policy considerations that would warrant imposition of interconnection obligations on CMRS providers even if CMRS providers lack market power and lack control of bottleneck facilities; and (2) Whether it would be a reasonable exercise of the Commission's discretion under Section 201 of the Act to conclude that any further examination of whether to impose interconnection obligations on CMRS providers may be premature at this stage in the development of the CMRS market. In addition, comment was sought on whether the failure to impose new interconnection obligations might unnecessarily restrict the capability of any CMRS providers to interconnect with the facilities of other CMRS providers. Finally, comment was sought on whether the Commission should address such matters by declaratory rulings resolving particular cases, or by issuing either specific rules or rules based on a general standard of reasonableness.[15]

b. Positions of the Parties

10. Interconnection requirement is premature. Marketplace should achieve desirable results. Many commenters argue that an inquiry into whether the Commission should require CMRS providers to provide interstate interconnection to other CMRS providers is premature, and several recommend that the Commission defer any further consideration of this issue until the CMRS industry has developed sufficiently to create a sufficient record on which to

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[13] *Interconnection NOI*, 9 FCC Rcd at 5458.

[14] *Id.*

[15] *Id.*

proceed.[16] Nextel characterizes the state of the CMRS marketplace as one of "infancy" and argues that it is premature to consider mandatory CMRS interconnection when the CMRS marketplace was defined by the Commission less than a year ago, some CMRS players are just beginning to emerge while others have yet to be licensed, and it is still not clear what players will actually be the participants in the CMRS marketplace. Nextel continues that imposition of an interconnection mandate on a nascent industry is unjustified and unnecessary, particularly since all CMRS end users can currently interconnect with users of any other network through the public switched telephone network (PSTN). Thus, Nextel maintains, because any user on any CMRS system can reach any other party with a telephone number -- on a wireless or wireline network -- through the PSTN, at this stage in CMRS development, there appears to be no compelling need for CMRS-to-CMRS interconnection regulation.[17]

11. Southern argues that at this stage, the specific technical requirements to implement CMRS-to-CMRS interconnection obligations are unknown, but the likelihood that such interconnection would be technically complex is almost a certainty. For example, Southern asserts, wide-area digital SMR systems are still in their developmental stages. Until deployed, how they will operate and compete with other commercial mobile services remains uncertain. Southern argues that because of this uncertainty, the technical implications and potential burdens involved in CMRS-to-CMRS interconnection are difficult to predict.[18] OneComm observes that the exact nature of PCS offerings also is not yet clear.[19] CTIA argues that a compulsory interconnection scheme would be particularly inappropriate for CMRS given that many CMRS networks have yet to be designed. CTIA states that at present, CMRS providers cannot know their interconnection needs and further, because each type of CMRS has a unique network with potentially different technological requirements, the costs of direct interconnection may be prohibitive.[20]

12. NABER asserts that few customers of traditional SMR systems have the need for interconnected service beyond the service area of a single operator. Rather, NABER states, such users typically require dispatch capabilities over a wide area.[21] The New York DPS contends that the current network structure, whereby the connection is made through the LEC,

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[16] *See, e.g.*, AMTA Comments at 14 and Reply Comments at 6-7; Bell Atlantic Comments at 15-17; Century Cellnet Reply Comments at 18 (mandated interconnection at best is premature, at worst is inimical to flexibility and responsiveness needed to meet evolving consumer needs); NABER Comments at 9-10; Nextel Comments at 18; Southern Comments at 4-5.

[17] Nextel Comments at 18-19. *Accord* NABER Comments at 9-10; OneComm Comments at 21.

[18] Southern Comments at 4.

[19] OneComm Comments at 21.

[20] CTIA Reply Comments at 13-14.

[21] NABER Comments at 10.

has been efficient because of the low volume of traffic of this nature. Further, that this is true even though each CMRS provider is required to pay access charges to the LEC. The New York DPS argues that where most of the CMRS traffic is from the CMRS customer to the landline customer direct interconnection between CMRS providers is not a critical issue. However, the New York DPS argues that as the number of CMRS providers and services increase and usage charges decline, there may be a dramatic increase in the number of calls completed between CMRS carriers and thus a direct connection between them may become more desirable from both a cost and a service standpoint.[22]

13. Most carriers argue that marketplace forces, rather than regulation, should determine the manner in which interconnection is furnished among CMRS providers, and urge that the Commission refrain from imposing interconnection obligations.[23] For example, Bell Atlantic argues that although the Commission can declare that CMRS carriers have a basic obligation as common carriers to interconnect with other licensed carriers upon reasonable request from those carriers, it should first rely on the marketplace to determine the appropriate interconnection arrangements. Bell Atlantic contends that the CMRS industry is undergoing rapid change, rendering present data on speculative inquiries, such as those contained in the *Interconnection NOI* an unreliable basis upon which to adopt particular interconnection requirements. In addition, Bell Atlantic argues that there is no evidence that wireless carriers have been unwilling to interconnect with each other, or that they have an economic incentive to avoid interconnection. Bell Atlantic maintains that to the extent interconnection facilitates a carrier's ability to offer attractive services to its customers, the carrier will have sufficient market incentives for interconnection, without the need for the Commission to intervene.[24] Moreover, Bell Atlantic asserts, experience shows that CMRS providers (for example, paging and cellular carriers) have reached voluntary interconnection agreements to serve the needs of their customers, indicating that there is no need to intervene to regulate interconnection arrangements among new or existing CMRS providers.[25]

14. BellSouth urges that, given the competitive nature of CMRS, the Commission should refrain from adopting any specific interconnection requirements. BellSouth suggests instead that any CMRS-to-CMRS interconnection arrangements should be established through

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[22] New York DPS Comments at 6.

[23] *See, e.g.*, AirTouch Comments at 22-23; Ameritech Comments at 4; Alltel Comments at 8; Bell Atlantic Comments at 15-17 and Reply comments at 13; Century Cellnet Reply Comments at 18; CTIA Comments at 26-28; GTE Comments at 46 and Reply Comments at 39; New Par Comments at 22; OneComm Comments at 21 and Reply Comments at 11; OPASTCO Comments at 5; Rochester Comments at 10 and Reply Comments at 10-11; SNET Mobility Comments at 13-14; Vanguard Comments at 22.

[24] Bell Atlantic Comments at 15-17; *accord* Ameritech Reply Comments at 5.

[25] Bell Atlantic Reply Comments at 13; *accord* Alltel Comments at 9.

good faith negotiation among the carriers involved. BellSouth recognizes that, although each CMRS provider should have an obligation to satisfy reasonable requests for interconnection, the definition of "reasonable" will vary from case to case. BellSouth notes that the technical and service requirements of a CMRS provider requesting interconnection from another CMRS provider must be balanced against factors such as the ability to provide the needed connection and the existence of alternative sources and forms of interconnection.[26] NYNEX also suggests that the Commission should permit interconnection arrangements to proceed by good faith negotiation, but should continue to monitor interconnection agreements to ensure that interconnection requests are not unreasonably denied.[27]

15. PCIA urges that the Commission not establish formal, detailed broadband PCS-to-PCS interconnection obligations now. PCIA states that in light of the competitive nature of the marketplace and the nascency of many service providers, specifying up-front what forms of interconnection will be considered technically reasonable would be imprudent. PCIA further argues that in the absence of control over bottleneck facilities, marketplace forces should result in interconnection being made available where warranted. Additionally, the pace of technical change in the industry and the developmental nature of many CMRS offerings counsel against the adoption of an overly rigid interconnection framework.[28]

16. Interconnection obligation is undesirable. Many CMRS providers, including most cellular carriers, some SMR providers, and several LECs with CMRS affiliates, oppose imposition of an interconnection obligation, arguing that the state of competition and the lack of bottleneck facilities would make such an obligation not only unnecessary but unwise because it would have a negative impact on competition.[29] CTIA argues that, in determining whether to impose interconnection obligations on CMRS providers, the Commission should be guided by the principle that such requirements are only necessary in those markets where a firm possesses persistent, sustained market power.[30] CTIA and other commenters assert that in a competitive market, such as CMRS, consumer demand and business necessity will dictate the extent and need for interconnection. They further argue that because commercial mobile radio services are operating in a competitive environment, there is no need to impose

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[26] BellSouth Comments at 13; *accord* NYNEX Comments at 13-14.

[27] NYNEX Comments at 14 and Reply Comments at 8.

[28] PCIA Comments at 14-16.

[29] *See, e.g.*, AirTouch Comments at 22-23; AT&T Reply Comments at 5; BellSouth Comments at 13-14; Comcast Comments at 17; CTIA Comments at 25-26 and Reply Comments at 12-14; NYNEX Comments at 13-14; SBC Comments at 66; Vanguard Comments at 22.

[30] *See* CTIA Comments at 25-26. *See also* RAM Comments at 6-7 (arguing that the Commission should impose interconnection obligation only on those carriers possessing market power).

interconnection obligations on them.[31] CTIA notes that only one case exists, concerning international record carriers, where the Commission has required carriers lacking market power to interconnect.[32] Comcast argues that the Commission should encourage the development of competitive networks through progressive LEC interconnection policies rather than by imposing costly and premature direct connection requirements on CMRS providers.[33]

17. CTIA further argues that, given the expense involved to establish compatibility by upgrading software, switches, and other network equipment, such requirements would be contrary to the public interest.[34] McCaw concurs with CTIA, arguing that imposing interconnection obligations will lead to situations where the expense of interconnection would exceed the value.[35] Horizon asserts that, for smaller carriers, the imposition of unwarranted and burdensome interconnection obligations would likely further decrease the limited capital that these providers would otherwise invest in their systems, ultimately degrading the quality of service that subscribers would otherwise obtain.[36]

18. Additionally, opponents of interconnection requirements argue that an interconnection obligation comparable to the landline interconnection obligation would require unnecessary regulatory oversight and deter investment in, and growth of, competing facilities. They argue that until an identifiable problem develops, it would be premature to adopt regulations that could skew marketplace decisions.[37] McCaw contends that regulation is too imperfect to discriminate accurately between situations where interconnection is efficient and other situations where it is inefficient. McCaw asserts that requiring inefficient interconnection would confer a disproportionate benefit on resellers and other CMRS

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[31] *See, e.g.*, CTIA Comments at 25-26; GTE Comments at 46; McCaw Comments at 6.

[32] *See* CTIA Comments at 30-32.

[33] Comcast Comments at 17.

[34] *See* CTIA Comments at 26-27. *See also* Vanguard Comments at 22 (an interconnection obligation risks hampering new providers with regulatory costs when the Commission is in the process of structuring and stimulating a vibrant, competitive CMRS marketplace).

[35] *See* McCaw Comments at 9-10. *See also* RCA Comments at 10 (interconnection may be illogical with respect to networks that provide different capabilities, *i.e.*, interconnection of voice and data services).

[36] Horizon Reply Comments at 7-8.

[37] *See, e.g.*, AirTouch Comments at 22-23; CTIA Comments at 26-28. *See also* Ameritech Comments at 4 (until a real "problem" develops in this area, it would be premature for the Commission to adopt regulations that could skew marketplace decisions).

providers who could obtain interconnection at artificially low prices.[38] CTIA also argues that interconnection may ultimately diminish consumer choice while substantially raising costs.[39]

19. CTIA and others argue that an interconnection obligation between CMRS providers is unnecessary because CMRS providers may access the network via the LEC.[40] CTIA contends that if all CMRS providers are interconnected with a LEC, then they and their customers will have access to all carrier networks. As a result, insists CTIA, direct connection of CMRS networks should be established only when such interconnection is more efficient than paying the LEC for transport and switching functions.[41] Both CTIA and SBC argue that direct CMRS-to-CMRS interconnection will develop naturally as firms recognize a business need for such a link.[42] However, McCaw asserts, indirect CMRS-to-CMRS interconnection through the LEC is likely to be the most efficient form of interconnection for the foreseeable future.[43]

20. NABER argues that interconnection obligations for SMR providers are both unnecessary and, in some cases, economically infeasible. NABER asserts that since typical SMR customers utilize interconnected service as an adjunct to dispatch service (and have other choices if unsatisfied) mandatory interconnection is unnecessary to ensure access to the PSTN. NABER contends that few SMR end users need to communicate with users on other SMR systems. Thus, routing such calls through the LEC should not be too inefficient or expensive.[44] E.F. Johnson asserts that it is illogical to assume that the subscriber of a local SMR system desires, or is willing to pay for, the ability to interconnect with PCS systems. Rather, contends E.F. Johnson, the customer expects to be able to communicate with other affiliated mobile units and, through interconnection with a LEC, other locations in the public switched network.[45] NABER also claims that there are three commonly used SMR platforms

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[38] *See* McCaw Comments at 9-10. *See also* SNET Comments at 14 (mandatory interconnection increases the risks faced by new and existing providers by allowing competitors to benefit from the providers' innovations without incurring the risks).

[39] CTIA Reply Comments at 14.

[40] AirTouch Comments at 22; CTIA Comments at 28-29; E.F. Johnson Comments at 7; McCaw Comments at 10-11; New Par Comments at 22-23; Nextel Comments at 18; SBC Comments at 66-67; SNET Comments at 13; Vanguard Comments at 22.

[41] CTIA Comments at 28.

[42] *Id.* at 28-29; SBC Comments at 66-67.

[43] McCaw Comments at 10 (*citing* Nelson Declaration at para. 3).

[44] NABER Comments at 9-10.

[45] E.F. Johnson Comments at 7.

which are incompatible. Therefore, argues NABER, while interconnection between platforms is technically possible, it would require a massive replacement of equipment for hundreds of SMR operators across the country.[46] Finally, NABER asserts that similar technical problems exist in the technologies announced for wide-area SMR systems and argues that the Commission therefore should not impose interconnection obligations on either traditional or wide-area SMR providers.[47]

21. PageNet contends that the Commission should only impose interconnection obligations where an industry is dominated by one or two providers that control bottleneck facilities. Since the paging market is highly competitive, there is no need for interconnection requirements. Further, PageNet urges that the Commission exclude paging providers from an interconnection obligation, arguing that a decision to require a particular service to interconnect should be made in light of that service's particular characteristics. PageNet asserts that in the context of intraservice interconnection, such as the interconnection requirement in cellular, interconnection policy stems from the desire for seamless service. PageNet contends that in the paging context seamless service already exists, thereby eliminating the need to impose an interconnection obligation on paging providers.[48]

22. Interconnection obligation is desirable. Pacific Bell supports a right to interconnection between CMRS providers and between CMRS providers and the LECs to enable the ubiquitous origination and termination of telecommunications. Pacific Bell observes that CMRS providers are designated as common carriers by the Omnibus Budget Reconciliation Act and thus are specifically subject to Section 201 of the Act. Continuing, Pacific Bell notes that Section 201 requires interconnection when the Commission determines that interconnection is in the public interest. Pacific Bell argues that interconnectivity of mobile communications promotes the public interest because it enhances greater flexibility in communications and makes services more attractive to consumers. Pacific Bell claims that one of the goals of the Commission in providing for the regulation of PCS is the universality of service and that interconnection will support this goal by enabling faster access to service over a wide area. However, Pacific Bell states, it only supports interconnection where technically feasible. Pacific Bell concludes that a requirement to enter into agreements negotiated in good faith should be sufficient to ensure that CMRS providers benefit from their right to interconnection. Pacific Bell observes that the Section 208 complaint process is

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[46] *Id.* at 10.

[47] *Id.* at 11 (claiming that Geotek's FHMA technology, Motorola's MIRS technology, RAM's Mobitex technology, and Ericsson/GE's EDACS technology are not compatible with one another). *See also* RAM Comments at 7 (interconnection obligations for narrowband services, including 900 MHz SMR services unwarranted).

[48] PageNet Comments at 10-11.

available to any party experiencing difficulty obtaining an appropriate interconnection agreement.[49]

23. Other commenters agree that the Commission should recognize the basic common carrier right to interconnection between CMRS providers. MCI and CSI\ComTech contend that there is nothing in Section 201 or Commission precedent that dictates that any and all interconnection obligations are premised on a connecting carrier having bottleneck facilities.[50] In its comments, MCI argues that CMRS providers are presumptively common carriers and should be required to interconnect with any other common carrier upon reasonable request pursuant to Section 201(a) of the Act.[51] In its reply comments, MCI argues further that the Commission has plenary authority under Section 201(a) of the Act to require that CMRS providers interconnect with one another. MCI asserts that in the interest of stimulating the most productive use of CMRS services, the Commission should exercise that authority, but refrain at this juncture from prescribing the terms of such interconnection. Continuing, MCI argues that interconnection among CMRS providers is presumptively in the public interest because it would ensure the most rapid growth and dissemination of mobile services. Accordingly, MCI reasons, it is appropriate for the Commission to require, as a matter of policy, such interconnection among CMRS providers and to stand ready to intercede in the event a CMRS provider refuses to interconnect, but it not necessary to prescribe the details of such interconnection arrangements unless the CMRS providers are unable to resolve any differences that may arise. MCI concludes that a broad Commission policy position favoring interconnection should provide a powerful incentive for even a recalcitrant CMRS carrier to agree to a reasonable interconnection request.[52]

24. GSA argues that the establishment of specific CMRS-to-CMRS interconnection requirements will foster interconnectivity and the growth of diverse and competitive mobile services. GSA maintains that the public interest will best be served, and the government's own competitive procurement responsibilities enhanced, if the Commission acts now to adopt CMRS-to-CMRS interconnection requirements that encourage the development of a robust "network of networks," and not a situation where most traffic from one CMRS provider must pass through a LEC switch to reach another CMRS provider, if such routing would be inefficient or unduly costly.[53]

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[49] Pacific Bell Comments at 16-18.

[50] CSI/ComTech Comments at 6 and Reply Comments at 3-4; MCI Reply Comments at 10.

[51] MCI Comments at 12; *accord* DCR Comments at 2 (interconnection should be an automatic right and obligation of all carriers offering service to the public).

[52] MCI Reply Comments at 10-11.

[53] GSA Comments at 7 and Reply Comments at 10-11 (such interconnection should be pursuant to interstate tariffs).

25. NCRA argues that requiring cellular carriers to interconnect with other CMRS providers at just and reasonable rates will produce consumer benefits similar to those anticipated from the Commission's Expanded Interconnection proceeding. [54] NCRA further argues that interconnection and access to unbundled service elements will dramatically improve the viability of cellular resellers as well as other facilities-based CMRS providers and thereby increase the overall number of CMRS carriers from which customers may choose to obtain service.[55] NCRA argues that Section 332(c)(1)(B) requires interconnection upon reasonable request. NCRA submits that all interconnection arrangements that are technically and economically feasible should be considered reasonable; that the party requesting interconnection pay costs directly related to interconnection; that the interconnecting party should not be responsible for the costs of increasing network capacity; that parties alleging infeasibility should be required to demonstrate such conditions by a clear preponderance of the evidence; and that carriers should be required to charge interconnecting parties reasonable, unbundled, cost-based rates.[56]

26. TRW argues that CMRS-to-CMRS interconnection should be mandated as soon as possible in order to encourage the development of a nationwide, seamless, wireless communications network that is independent of the LECs and can compete with the extant landline network. However, TRW also advocates deferral of the imposition of interconnection obligations on mobile satellite service (MSS) related CMRS providers. TRW contends that because MSS space segment providers are not yet operational and because of the unique attributes of MSS itself -- including its global coverage area and limited gateway access -- it is unclear how the capacity will be used on a local level by CMRS providers and end users. TRW asserts that the uncertainty regarding the way in which MSS systems will be used to provide CMRS and how the market will develop for those services, renders imposition of interconnection requirements for MSS providers premature. TRW argues that until the expected demand for MSS space segment in the CMRS marketplace has had an opportunity to develop, imposing a mandatory interconnection obligation on MSS CMRS providers could, in

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[54] Expanded Interconnection with Local Telephone Company Facilities, CC Docket No. 91-141, Report and Order and Notice of Proposed Rule Making, 7 FCC Rcd 7369 (1992) (*Special Access Expanded Interconnection Order*), *recon.*, 8 FCC Rcd 127 (1992), *vacated in part and remanded sub nom.*, Bell Atlantic v. FCC, No. 92-1619 (D.C. Cir., June 10, 1994); *recon.*, 8 FCC Rcd 7341 (1993); *on remand* Memorandum Opinion and Order, 9 FCC Rcd 5154 (1994) (*Virtual Collocation Order*). According to NCRA, such benefits include increasing LEC incentives for efficiency and encouraging LECs to deploy new technologies facilitating innovative service offerings; making LECs more responsive to customers; increasing the choices available to access customers who value redundancy and route diversity; and increasing competition resulting in reduced prices for services available from both the LECs and alternative suppliers. NCRA Comments at 12, citing *Special Access Expanded Interconnection Order*, at para. 14.

[55] NCRA Comments at 13.

[56] NCRA Comments at 16-18.

fact, inhibit the genesis of a robust market by depriving operators and CMRS providers of desirable design and implementation flexibility.[57]

27. Interconnection guidelines are desirable. Although PCIA recommends that the Commission let CMRS-to-CMRS interconnection proceed largely at the direction of the marketplace, it urges that the Commission nonetheless establish basic interconnection guidelines within which this development should occur. [58] PCIA and APC each propose that the Commission establish broad guidelines for interconnection based on the requirements of Sections 201 and 202 of the Communications Act, in order to reinforce incentives for interconnection and promote goals of efficient access to public networks. Specifically, they recommend the following: (1) as required by Section 201(a) of the Act, CMRS providers should be required to provide interconnection service upon reasonable request. A CMRS provider should not be permitted to deny interconnection unless it can demonstrate that such a denial is reasonable;[59] (2) as required by Section 202(a), CMRS providers cannot engage in unreasonable discrimination in offering interconnection to other CMRS providers. That is to say, if a CMRS provider offers an interconnection arrangement to one CMRS provider, the carrier may not deny that arrangement to a similarly situated CMRS provider without demonstrating that such denial is reasonable; (3) CMRS providers are co-carriers and as such should be required to negotiate in good faith. Carriers should respond to requests for interconnection in a reasonable and timely manner.[60] PCIA suggests that these principles should apply to all broadband PCS providers, including resellers using their own switches, and further adds that the Commission should not extend interconnection rights to private carriers or individuals (other than grandfathered private carriers that will be reclassified as CMRS).[61]

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[57] TRW Comments at 5-8.

[58] PCIA Comments at 16-18 and Reply Comments at 7-8; *accord* APC Comments at 6-7. *But see* Nextel Reply Comments at 14 (even guidelines are premature in light of industry's infancy).

[59] Both PCIA and APC advocate classification of CMRS providers as "dominant" and "non-dominant" for purposes of their proposed guidelines. PCIA suggests that in the event of a dispute under Section 201(b), the interconnection rates of non-dominant CMRS providers should be presumed just and reasonable; CMRS providers (if any) that are considered dominant would have the burden, if challenged, of producing evidence that their interconnection rates are just and reasonable. PCIA states that as with LEC/CMRS interconnection, this standard can be satisfied by cost-based rates, but non-cost based rates may also be just and reasonable based on other considerations, such as technical challenges or uncertain demand for particular interconnection arrangements. PCIA Comments at 17. APC goes further, and argues that PCS providers should be classified as non-dominant CMRS providers and their rates be presumed just and reasonable. APC argues that cellular providers, on the hand, should be classified as dominant CMRS providers and accordingly bear the burden of demonstrating, if challenged, that their rates are just and reasonable. APC Comments at 6.

[60] APC Comments at 6-7; PCIA Comments at 16-18.

[61] PCIA Comments at 18.

c. Discussion

28. As a general matter, we believe that the interconnectivity of mobile communications networks promotes the public interest because it enhances access to all networks, provides valuable network redundancy, allows for greater flexibility in communications, and makes communications services more attractive to consumers. It is one further step toward a ubiquitous "network of networks."[62] Under appropriate circumstances, we believe that CMRS-to-CMRS interconnection can promote the efficient provision of service to consumers at reasonable prices and will promote and achieve the broadest possible access to telecommunications networks and services by all telecommunications users. We seek to establish a framework under which the benefits of interconnection are realized primarily through private negotiations and arrangements. We are prompted to seek such a framework in part because we are cognizant that private discussions and transactions among carriers may provide a more suitable mechanism for distributing the costs and realizing the benefits associated with CMRS-to-CMRS interconnection than the regulatory process. We believe that the public interest considerations should play a role in guiding these carrier transactions, and we are at the same time confident that the technical and economic feasibility of such interconnection will be explored and defined through these private arrangements.

29. We agree with the majority of commenters who argue that it is premature, at this stage in the development of the CMRS industry, for the Commission to impose a general interstate interconnection obligation on all CMRS providers. First, and most tellingly, the record in response to the *Interconnection NOI* provides an insufficient basis for proposing a general interstate interconnection obligation. This is due, at least in part, to the fact that the CMRS industry is undergoing rapid change in terms of technologies and facilities employed, rendering many of the inquiries contained in the *Interconnection NOI* speculative and any data provided in response to such inquiries unreliable as a basis for a rule making. How some of these new mobile services will operate and compete with other services remains uncertain. As Nextel observed, the CMRS marketplace is in the early stages of its development, with some CMRS companies just beginning to emerge while others have yet to be licensed, leaving unclear the identity of the companies that will actually be participants in the CMRS marketplace.[63] The Commission only recently concluded its initial auction of spectrum for the A and B blocks of broadband PCS services.[64] Until those initial licenses are awarded, and

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[62] *See, e.g.*, H.R. Report No. 103-111, 103d Cong., 1st Sess. 261 (1993)(House Report)("The Committee considers the right to interconnect an important one which the Commission shall seek to promote, since interconnection serves to enhance competition and advance a seamless national network.")

[63] *See* Nextel Comments at 18-19.

[64] *See* Press Release No. 52905, "PCS Auction Update: FCC Receives Full $1.4 Billion Deposit," dated March 21, 1995.

PCS system build-out begins, the nature of the needs of the parties with the greatest potential interest in directly interconnecting with other CMRS providers will not be clearly established. Because we do not know what the CMRS networks will look like, we cannot determine as a general matter what points of interconnection would be the most efficient. In view of the nascency of many service providers, and the rapidly developing technologies they may be employing, we cannot at this time make general conclusions about either the technical nature of CMRS-to-CMRS interconnection, the costs involved, the impact of general interconnection obligations on infrastructure development and network efficiency, or the nature of any rules that would best promote efficient interconnectivity.

30. Second, as several commenters note, all CMRS end users can currently interconnect with users of any other network through the LEC landline network.[65] The NY DPS, we believe, correctly observes that the current network structure whereby the connection is made through LEC facilities has been efficient because of the low volume of CMRS traffic (as compared to landline traffic) even though each CMRS provider has been required to pay interconnection charges to the LEC. [66] In such an environment, where most of the traffic is typically from the CMRS customer to the landline customer, direct CMRS-to-CMRS interconnection has not been perceived as a critical issue by CMRS carriers. However, we caution that this is not to say that the balance will not shift in the future. As the number of CMRS providers (both facilities-based carriers and resellers) and the number and variety of mobile services increase, and current mobile services rates evolve toward lower usage charges, there may be a dramatic increase in the number of calls completed between CMRS systems, making more extensive direct connections between CMRS providers beneficial from both a cost and service standpoint.

31. Third, we do not think that present market conditions indicate that it is necessary to impose a general interstate interconnection obligation at this time. The fact that interconnection is already available through LEC facilities reduces the potential for CMRS providers to use denial of interconnection as an anticompetitive tool against their competitors. If interconnection between CMRS providers could only be accomplished through direct links (without access to LEC facilities), one CMRS carrier could prevent a second from terminating calls on the first carrier's network or from receiving calls from customers of the first network, thus limiting the service the second carrier could offer its customers. If the first carrier were much larger than the second, lack of interconnection would be more harmful to the second. With interconnection available through the LEC, however, no CMRS carrier can limit the service that another can offer.

32. If costs of indirect interconnection through the LEC were higher than direct CMRS-to-CMRS interconnection, however, some potential might exist for CMRS providers to raise their rivals' costs by denying direct interconnection, or increasing the price of direct

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[65] *See, e.g*, Nextel Comments at 19; Comcast Comments at 17; NY DPS Comments at 6.

[66] *See* NY DPS Comments at 6.

interconnection to the price charged by the LEC for indirect interconnection. The ability to harm rivals would then depend on the relative costs of direct interconnection and interconnection through the LEC, and on the share of the rival's traffic that terminated with the CMRS provider. In most cases, to have an anticompetitive incentive and ability to deny interconnection to a rival, a CMRS provider would have to be much larger than the rival (or at least carry more of the rival's terminating traffic than the rival carries of its terminating traffic); otherwise the denying carrier's own costs would be raised as much as the rival's by lack of direct interconnection. Thus, unless considerable difference exists in market share among CMRS firms, the firms will probably gain more from jointly lowering their own costs through allowing direct interconnection than from raising rivals' costs by denying it. We invite interested parties to provide data and analysis arguing for or against the view that interconnection among CMRS providers is particularly important to the economic viability of CMRS providers, or to the advancement of Congressional and Commission public policy goals with respect to enhancing competition, promoting infrastructure investment, and facilitating access to the Nation's telecommunications networks.[67]

33. This discussion makes clear that the CMRS provider's market share, and the definition of the relevant market, are important to the determination of the potential for profitably raising rivals' costs. We tentatively conclude that there are at least three possible relevant product markets: (1) local exchange, both landline and wireless; (2) all commercial mobile radio services; and (3) mobile voice services. The first market definition could be supported by the view that the only way to raise a rival's cost significantly is to deny direct interconnection for a significant proportion of all calls originating on the facilities of the competing CMRS provider. The second definition could be supported by the view that the customers of CMRS providers find it particularly valuable to be able to reach at low cost the subscribers of other CMRS providers. The third might be based upon the consideration that a paging provider cannot compete directly with a cellular carrier to complete telephone calls. We seek comment on each of these definitions of the relevant product market and solicit data and analysis pertinent to our identification of the definition most useful to a decision regarding CMRS interconnection.

34. We also seek comment regarding whether the relevant geographic market should be considered to be a local market, under the view that two providers in different cities, for example, do not serve as substitutes for terminating calls to a given subscriber. Under this approach, the relevant geographic market may be either the service area or license area, depending on the definition of the relevant product market chosen. This analysis assumes that most CMRS calls are terminated locally. We seek comment on the distribution of call termination because this may affect the ability of a firm with a high share of a single local market, or set of local markets, to raise rivals' costs. For example, if a significant portion of

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[67] *See* note 62, *supra*, (citing Budget Act legislative history); *CMRS Second Report and Order*, 9 FCC Rcd at 1419-22.

calls were terminated in another area, then the power of a local CMRS provider to increase rivals' costs through denial of interconnection would be significantly diminished.

35. We seek comment on our tentative conclusions regarding the relevant market definitions for purposes of analyzing the need for an interstate interconnection obligation. Interested parties are encourage to propose any alternative product and geographic markets that they think are relevant. Interested parties are encouraged to propose any alternative product and geographic markets that they think are relevant.

36. In the past, the Commission has found it in the public interest to impose interstate interconnection obligations generally either to promote competition in the provision of monopoly interstate services, or to prevent anticompetitive conduct by carriers with market power who could use refusals to interconnect for anticompetitive purposes.[68] We have more recently recognized that the presence or absence of market power is an important factor in determining whether the imposition of a general interconnection obligation in the form of an equal access obligation on CMRS providers may be in the public interest.[69] As a result of our recent spectrum auctions, as well as other developments in the industry, we believe that all commercial mobile radio services will be provided on a competitive basis by multiple facilities-based competitors in each license area in the near future, thus potentially lessening the need for regulatory intervention.

37. Through their comments, established industry representatives (cellular carriers, LECs, trade associations) have represented that when traffic volumes between CMRS systems justify direct connections, the industry will implement interconnection because it will make business sense to do so. The current record presents the Commission with no reason to believe that this will not be the case, and we fully expect all CMRS providers to behave in an economically rational manner and to implement direct and efficient network connections at reasonable costs when the opportunity and need arise. For now, we are confident that the

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[68] *See, e.g.,* In the Matter of Establishment of Policies and Procedures for Consideration of Application to Provide Specialized Common Carrier Services in the Domestic Public Point-to-Point Microwave Radio Service and Proposed Amendments to Parts 21, 43, and 61 of the Commission's Rules, 29 FCC 2d 870 (1971); The Need to Promote Competition and Efficient Use of the Spectrum for Radio Common Carrier Services, Memorandum Opinion and Order, 59 RR 2d 1275, 1283 (App. B)(1986); Declaratory Ruling, 2 FCC Rcd 2910 (1987), *aff'd* Memorandum Opinion and Order on Reconsideration, 4 FCC Rcd 2369 (1989).

[69] *See Equal Access NPRM,* 9 FCC Rcd at 5425. There, we tentatively employed the definition of market power used by the Justice Department: "the ability profitably to maintain prices above competitive levels for a significant period of time. . . ." Id. at 5425 n.86, citing United States Department of Justice, Federal Trade Commission, "Horizontal Merger Guidelines," (Apr. 2, 1992), at 4 & n.6 (explaining that "[s]ellers with market power also may lessen competition on dimensions other than price, such as product quality, service, or innovation").

decision of interconnection "where warranted" is best left to the business judgment of the carriers themselves.

38. Nonetheless, we believe that it is important to reiterate the statutory rights and obligations of CMRS providers and to begin to articulate some policy guidelines to help chart the course of the CMRS industry through this all-important early phase of its development. This reiteration is intended to aid carriers in determining how the Commission will implement the basic common carrier rights and obligations of commercial mobile radio providers under the Communications Act. First, we remind all CMRS providers from whom interconnection is sought, that they are common carriers subject to the basic commands of Sections 201 and 202 of the Communications Act. Second, we remind any CMRS providers seeking interconnection that they may avail themselves of the Section 208 complaint process to seek redress for violations of the Communications Act or the Commission's rules.[70]

39. The first clause of Section 201(a) of the Act requires all CMRS providers and other common carriers to furnish communications service upon reasonable request.[71] The second clause of Section 201(a) states that common carriers must establish physical connections with other carriers "in accordance with the orders of the Commission, in cases where the Commission, after opportunity for hearing, finds such action necessary or desirable in the public interest."[72] We read Section 332(c)(1)(B) of the Communications Act, as added by the Budget Act,[73] together with Section 201(a) to mean that the Commission is required to

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[70] Section 332(c)(1)(A) of the Act mandates the common carrier treatment of commercial radio mobile services. It states, in pertinent part:

> A person engaged in the provision of a service that is a commercial mobile service shall, insofar as such person is so engaged, be treated as a common carrier for purposes of this Act, except for such provisions of title II as the Commission may specify be regulation as inapplicable to that service or person. In prescribing or amending any such regulation, the Commission may not specify any provision of section 201, 202, or 208 . . .

47 U.S.C. § 332(c)(1)(A).

[71] The first clause of Section 201(a) states: "It shall be the duty of every common carrier engaged in interstate or foreign communication by wire or radio to furnish such communication service upon reasonable request therefor . . . ." 47 U.S.C. § 201(a).

[72] *Id.*

[73] The Budget Act amended the Communications Act to provide, pursuant to Section 332(c)(1)(B), that:

respond to requests for interconnection with proceedings to determine whether it is necessary or desirable in the public interest to order interconnection in particular cases. In addition, CMRS providers are protected from unjust and unreasonable charges, practices, classifications, and regulations in connection with communications service under Section 201(b), and from unjust and unreasonable discrimination in charges, practices, classifications, regulations, facilities, or services for or in connection with such service under Section 202(a) of the Act.

40. The steps the Commission may take to enforce the statutory rights and obligations set forth in Section 201(a) as they relate to the provision of CMRS may include: (1) initiation of a notice and comment rule making proceeding aimed at developing rules of general applicability to broad classes of common carriers; (2) resolution of individual complaints pursuant to Section 208, and (3) initiation of other proceedings in response to requests of CMRS providers for interconnection pursuant to Section 332(c)(1)(B) of the Act . Thus, for example, CMRS providers may avail themselves of the Section 208 complaint process to bring to our attention any denials of interconnection they believe to be unreasonable or otherwise unlawful and may also use Section 208 to bring to our attention any terms and conditions of interconnection they believe to be in violation of the Section 201(b) or Section 202(a) prohibitions on unjust or unreasonable charges or practices.

41. We tentatively conclude that regardless of the procedural vehicle chosen, the central legal issue under Section 201(a) is whether the public interest would be served by the imposition of interconnection obligations on CMRS providers. We have tentatively concluded that efficient interconnection will serve the public interest by promoting the efficient provision of service to consumers at reasonable prices and by fostering competition. We tentatively conclude that a market power analysis should be the basic analysis we conduct in determining whether to impose specific interconnection obligations. Past interconnection decisions have primarily been addressed to local exchange carriers with significant market power. However, we are heading into unchartered territory as we consider issues of interconnection between CMRS carriers, who are less likely to have market power in the future. Therefore, our interconnection analysis should also consider whether other public policies, such as insuring broad access to the networks of the future, argue for imposing interconnection obligations in

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> Upon request of any person providing commercial mobile service, the Commission shall order a common carrier to establish physical connections with such service pursuant to the provisions of section 201 of this Act. Except to the extent that the Commission is required to respond to such a request, this subparagraph shall not be construed as a limitation or expansion of the Commission's authority to order interconnection pursuant to this Act.

47 U.S.C. § 332(c)(1)(B).

the absence of significant market power. [74] We solicit comment on this analysis by any interested parties.

42. Thus, in addressing requests for interconnection , we would anticipate the need to engage in an analysis of market power and an assessment of other public policy goals, together with an analysis of the facts in the particular case. We believe that our analysis of market power is important because carriers possessing market power might deny interconnection and thus preclude other carriers from gaining economically efficient access to telecommunications networks and from competing to serve end users. We further believe that it is important to consider public policy goals in addition to market power because the statutory standard for ordering interconnection under Section 201(a) is "the public interest," an inquiry that is broader than an inquiry into the presence or absence of market power. Finally, we would, of course, make this public interest evaluation based upon the circumstances presented in the particular record under consideration. We intend to monitor the number and nature of interconnection-related requests and complaints carefully. Should the Commission find itself faced with an increasing number of complaints alleging unreasonable denial of interconnection, we may revisit the need for adopting interconnection rules of general applicability through the rule making process. Similarly, we intend to monitor closely the development of the CMRS marketplace and any emergence of market power in that marketplace.

43. We reiterate that the Commission stands ready to intercede in the event a CMRS provider refuses a reasonable request to interconnect. We will be particularly vigilant in policing, where they exist, any efforts by CMRS providers to deny interconnection in order to gain an unfair competitive advantage. For example, we would find LEC investment in, and affiliation with, the party denying interconnection an important factor in assessing whether

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[74] *See generally Equal Access NPRM*, 9 FCC Rcd at 5424 (tentatively concluding that the public interest determination with respect to CMRS equal access should include both a market power analysis and analysis of whether equal access would promote these other policy goals), *citing* Mid-Texas Communications v. AT& T, *615 F.2d 1372, 1379 (5th Cir. 1980), reh'g denied,* 618 F.2d 716, *cert. denied*, 459 U.S. 1145 (1981)(Commission considers a number of specific non-competition-related factors in determining public interest in interconnection cases); Phonetele, Inc. v. AT&T, 664 F.2d 716, 722 (9th Cir. 1981), *cert. denied,* __ U.S. __, 112 S.Ct 1283 (1992)(such factors include network safety and efficiency, the need of the public for reliable service at reasonable rates, the proper allocation of the rate burden, the financial integrity of the carriers, and the future needs of both users and carriers), *citing, inter alia,* Proposal for New or Revised Classes of Interstate and Foreign Message Toll Telephone (MTS) and Wide Area Telephone Service (WATS), Second Report and Order, 58 FCC 2d 736,740 (1976)(there is a pro-competitive policy embodied in the Federal Communications Act, although it is a corollary of the more basic policy of favoring customer utility and freedom of choice). *See also Virtual Collocation Remand Order*, 9 FCC Rcd at 5184 (in absence of any other identified public interest benefits in mandating reciprocity, Commission found no reason to impose expanded interconnection requirements on parties that lack market power and do not control bottleneck facilities) and *CMRS Second Report,* 9 FCC Rcd at 1417-22 (identifying public interest goals of commercial mobile radio service regulation.

such denial was motivated by an anticompetitive animus. Unlike independent CMRS carriers, LEC-affiliated CMRS carriers may have a unique incentive to deny interconnection so as to keep CMRS-to-CMRS traffic interconnected through the local exchange landline network, and to continue to collect CMRS interconnection charges from both sets of CMRS providers through their access charge structure. Such LEC ownership interests may play an important role in assessing whether a denial of interconnection is a reasonable business decision or a form of anticompetitive conduct intended to raise rivals' costs of doing business and hence hinder competition.[75]

44. We seek comment on our assessment of the role of LEC investment in CMRS providers in determining the reasonableness of a denial of interconnection. We also seek comment regarding other anticompetitive incentives that may motivate CMRS providers to withhold interconnection or to attempt to make interconnection available on unreasonable or unreasonably discriminatory terms or conditions. Finally, in light of the foregoing discussion regarding the prematurity of imposing a general interstate interconnection obligation at this time, we seek additional comment on the issue raised in the *Interconnection NOI* with respect to preemption of state-imposed interconnection obligations.[76]

2. Roaming

a. Background

45. "Roaming" describes the situation which occurs when the subscriber of one CMRS provider enters the service area of another CMRS provider with whom the subscriber has no pre-existing service or financial relationship, and attempts either to continue an in-progress call, to receive an in-coming call or to place an out-going call. The *Interconnection NOI* requested comment on whether the Commission should allow some or all CMRS providers to permit other CMRS providers' subscribers to use their system on a roaming basis and whether it should require a technical compatibility of equipment. The *Interconnection NOI* further sought comment on what interconnection obligations may be necessary to ensure that CMRS carriers provide to end users of various CMRS services and other carriers access to mobile

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[75] *See* S. Salop & D. Scheffman, "Raising Rivals' Costs," AEA Papers and Proceedings, May 1983, at 267-271; T. Krattenmaker & S. Salop "Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price," 96 Yale L.J. 209 (1986).

[76] *See Interconnection NOI*, 9 FCC Rcd at 5468, stating: "In particular, if we decide not to impose interconnection obligations on some or all CMRS providers, should we preempt any state from imposing such obligations?" Although we received comments from some parties in response to this question in the *Interconnection NOI*, we seek additional comment in light of the discussion contained herein.

location data bases and to routing information such as that contained in cellular carriers' Home Location Register (HLR) and Visited Location Register (VLR).[77]

46. Part 22 of the Commission's Rules, 47 C.F.R. § 22, *et seq.*, governs the provision of "Public Mobile Services." Section 22.99 defines a "roamer" as a "mobile station receiving service from a station or system in the Public Mobile Services other than one to which it is a subscriber." That same section defines a "mobile station" as "one or more transmitters that are capable of operation while in motion." Pursuant to Section 22.901, cellular system licensees "must provide cellular mobile radiotelephone service upon request to all cellular subscribers in good standing, including roamers, while such subscribers are located within any portion for the authorized cellular geographic service area (see § 22.911) where facilities have been constructed and service to subscribers has commenced."

b. Positions of the Parties

47. APC argues that PCS systems will be directly competing with fully established cellular systems that offer their subscribers coast-to-coast roaming capabilities. APC asserts that as PCS providers begin building out their systems, they will be able to offer competitive service only if subscribers have access to nationwide roaming capabilities on cellular systems. APC argues that unless the Commission mandates that cellular providers must enter into fair and reasonable interconnection and roaming agreements with PCS providers, cellular carriers will be able to use their market power to inhibit the development of PCS. Accordingly, APC requests the Commission to require cellular providers to interconnect their Home Location Register and Visitor Location Register databases so that roaming is technically feasible and to provide such interconnection within one year of the PCS provider's request.[78]

48. In an *Ex Parte* Letter dated January 27, 1995, APC maintains that the exact same processes that operate to enable cellular to cellular roaming could work for roaming between CMRS operators at 1900 MHz (PCS) and 800 MHz (cellular) when dual band phone handsets are available and utilized. According to APC, handset manufacturers estimate such handsets will be available in early 1996. However, APC argues, PCS to cellular roaming will

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[77] *Interconnection NOI*, 9 FCC Rcd at 5464-465. The cellular databases are a Home Location Register (HLR) and a Visited Location Register (VLR). The HLR is owned by the service provider through which the customer has a subscription, and contains the customer's permanent database record. The HLR includes various sorts of proprietary customer information including mobile carrier number, electronic serial number, features which the customer has opted to purchase from the mobile system provider, the customer's pre-subscribed interexchange carrier (if required), whether the customer will accept or pay for out-of-territory calls and other information. The VLR contains similar information for customers roaming in to a foreign provider's territory. The VLR is used to keep a temporary copy of a customer's database record in the switch serving the customer at any moment and at any place.

[78] APC Comments at 6-7 and Reply Comments at 5.

only work if (1) 800 MHz CMRS operators agree to allow roaming subscribers of a 1900 MHz CMRS provider to use their system; and (2) the 800 MHz CMRS providers program their HLR and VLR databases to communicate with 1900 MHz CMRS provider databases. APC maintains that the Signalling System #7 (SS7) network will transport any provider's messages across it, but if the databases at each end refuse to acknowledge each other's messages, no reciprocal data transfers, and hence no roaming service can occur. APC asserts that an 800 MHz CMRS provider could effectively block the new 1900 MHz entrant from taking advantage of the 800 MHz CMRS provider's nationwide network, thus reinforcing the cellular carrier's ten-year head-start.[79]

49. Southern states that, although the technical implications and potential burdens involved in wholesale CMRS-to-CMRS interconnection are difficult to predict at this time, the Commission should consider such obligations on a service-by-service basis. Southern advocates that the Commission should now require digital, wide-area SMR licensees to enter into roaming agreements. Southern claims the Commission has designated standard control channels throughout the United States which allow subscribers to access the network of any cellular system in a given market, and that it should do the same for SMR systems. Southern claims that, without regulations mandating standard provisions in roaming agreements whereby SMR licensees will designate and disclose the control frequencies to access each other's networks, certain SMRs could unreasonably refuse to allow another SMR's customers access to their systems, thus foreclosing roaming capabilities for non-subscribers. Southern maintains that this could have the effect of stifling competition, contrary to the goals of the Commission.[80] In contrast, NABER notes that marketplace forces have caused many SMR operators with similar operating platforms to enter into voluntary agreements for roaming, although such roaming is on a manual, not automatic, basis for the end user. NABER suggests that the Commission permit such marketplace forces to determine whether such arrangements should proliferate.[81]

50. According to BellSouth, the roaming networks are increasingly using SS7 to provide for an exchange of customers' service profiles, thereby allowing customers to "carry" with them the advanced features to which they subscribe in their home systems. Thus, customers may activate or deactivate call forwarding or voice mail systems offered by their home systems while roaming in the same way they do at home. BellSouth avers that the end user does not need any special "interconnection" arrangements to use such features.[82] BellSouth opposes any requirement that would obligate CMRS providers to permit unbundled

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[79] *See Ex Parte* Letter in CC Docket No. 94-54, from K. A. Wimmer, American Personal Communications, (Jan. 27, 1995).

[80] Southern Comments at 4-6.

[81] NABER Comments at 11.

[82] BellSouth Comments at 16.